

Northern Great Plains Network

Inventory and Monitoring Monthly Report

October 2002

“Vital Signs” Monitoring Funding: Well, the latest news on monitoring money for FY03 is cautiously positive. The IMAC folks (national Inventory & Monitoring Advisory Committee) decided to recommend providing startup money (i.e., \$150k) for all the remaining unfunded Networks. In other words, there is support within NPS for us to get monitoring money in FY03 (this would be in addition to our inventory funds of \$197k). The “caution” is that our getting monitoring money now depends on NPS getting the level of funding from congress that it got last year.

New Office: My stuff is moved to Mt. Rushmore NMEM, however I do not yet have a phone number (if you need to contact me use my cell phone: 605 431-9235). Thanks to the folks at Rushmore for the new paint and carpet!

Administrative Stuff: As you may know, the I&M Networks are being structured as de facto park units in that they have their own org/cost code (“2107” in our case). The Northern Great Plains Network now has its own alpha code; NGPN (for Northern Great Plains Network obviously).

Northern Great Plains Annual I&M Meeting: The annual meeting for our Network is being planned for this winter. It has been tentatively agreed that the meeting will be held in Rapid City in January or February in conjunction with NEKOTA and Fire. We are still working on the exact dates and location.

FY02 Report and FY03 Work Plan: The remainder of this monthly newsletter consists of our *FY02 Inventory & Monitoring Report/ FY03 Work Plan* which was recently submitted to WASO. As you can see, Bill Supernaugh signed on behalf of the Network Steering Committee since he is now the only Superintendent on the committee (due to Noel Poe’s departure). At our meeting in a few months we will need to revisit the Steering Committee composition and role (especially in light of “maybe” getting monitoring funds in FY03).

.....

ANNUAL ADMINISTRATIVE REPORT (FY2002) AND WORK PLAN (FY 2003) FOR INVENTORIES AND VITAL SIGNS MONITORING

NORTHERN GREAT PLAINS NETWORK

Includes Agate Fossil Beds NM, Badlands NP, Devils Tower NM, Fort Laramie NHS, Fort Union Trading Post NHS, Jewel Cave NM, Knife River Indian Villages NHS, Missouri National Recreation River, Mount Rushmore NMEM, Niobrara Scenic River, Scotts Bluff NM, Theodore Roosevelt NP, and Wind Cave NP

Northern Great Plains Network Approval Signatures

Signed // Dan Licht
11/08/02

Dan Licht, Northern Great Plains I&M Coordinator
Northern Great Plains Network

Date

Signed // Phyllis Adams
11/08/02

Phyllis Adams, Midwest Region I&M Coordinator
Midwest Region

Date

Signed // William Supernaugh

11/08/02

William Supernaugh, Superintendent, Badlands National Park
For the Northern Great Plains Network Steering Committee

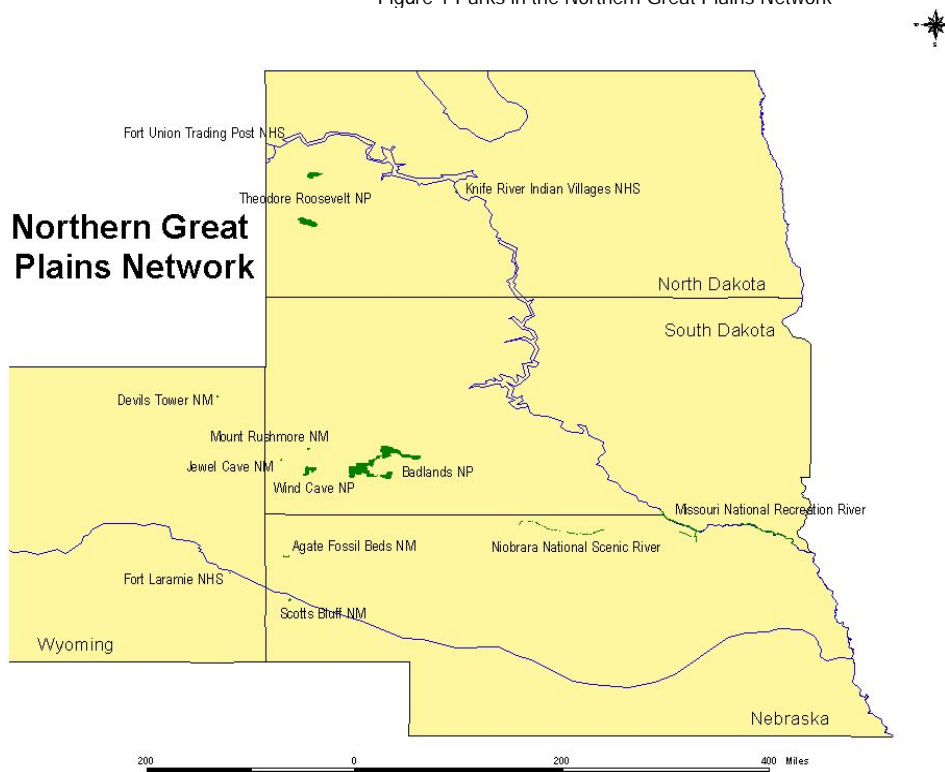
Date

I. OVERVIEW AND OBJECTIVES

The Northern Great Plains (NGP) Network includes thirteen national park units located in Nebraska, North and South Dakota, and eastern Wyoming (Figure 1). In FY02, the Network received \$197,100 for conducting the biological inventory phase of the National Park Service (NPS) Inventory & Monitoring (I&M) Program. The Network did not receive funding for Vital Signs monitoring.

The Network used the inventory funds to: conduct field inventories for mammals, birds, and herpetofauna; identify, evaluate, and document existing biological data; populate NPSpecies, NatureBib, and other I&M databases; coordinate with other agencies and subject-matter experts; conduct a museum search for voucher specimens; and develop and test tools for making I&M data more accessible to park staff. These activities and accomplishments were identified in the Network's four-year inventory study plan which was approved by the NPS Washington Office (WASO) in FY02.

Figure 1 Parks in the Northern Great Plains Network



In addition to the inventory work described above, the Network conducted activities in FY02 in preparation for receiving Vital Signs monitoring funding in the future. Specifically, the Network conducted preliminary park-specific Vital Signs monitoring discussions in conjunction with park-specific inventory meetings.

The following objectives provided guidance to the Northern Great Plains Network's I&M Program for FY02.

Program Objectives for Biological Inventory Phase

- 1) Hire necessary personnel and develop infrastructure to implement the inventory program.
- 2) Compile and evaluate existing data for vertebrates and vascular plants.
- 3) Complete the documentation of 90% of vertebrate and vascular plant species expected to occur in the parks.

Program Objectives for Vital Signs Monitoring Phase

- 4) As opportunities arise, prepare for the monitoring phase of the I&M Program.

II. ACCOMPLISHMENTS (FY2002) AND SCHEDULED ACTIVITIES (FY2003)

A. Biological Inventories

Objective 1 – Hire necessary personnel and develop infrastructure to implement the inventory program.

FY02 Accomplishments:

- The Network retained the same Inventory Coordinator for all of FY02. However, the Network biological technician resigned in May of FY02. A technician was hired for the summer months and did an exceptional job. In late summer the Network paid for 2 months of a Wind Cave NP computer assistant's time. The Network used these short-term hires in part because of the likely move to the Rapid City area at the end of FY02.
- Additional office (e.g., printers) and field (e.g., motion sensing wildlife cameras, GPS units) equipment was procured that is critical to a fully functioning inventory program. In addition, the program acquired three digital cameras, two scanners, and other photographic equipment through a Kodak grant.
- The Network developed an oral agreement with the U.S. Forest Service to co-locate with a district of the Black Hills National Forest and the U.S. Forest Service-Rocky Mountain Research Station once their proposed new building is constructed south of Rapid City, South Dakota (planned for 2004). It is anticipated that this building will be the permanent site of the Network I&M Program.

FY03 Activities and Products:

- The Network I&M Coordinator will relocate the Network office to Mount Rushmore NM in early FY03 as an interim site until the U.S. Forest Service building in Rapid City is completed.
- A computer assistant should be hired in early FY03. The term position is designed to last a minimum of 13 months. The position will be responsible for data management and for assisting parks with I&M databases. The decision to

hire from the computer series versus the biological technician series was made in part from experiences to date working with inventory data.

- The Northern Prairie Science Center of USGS-BRD (headquartered in Jamestown, North Dakota) will co-locate a research-grade plant ecologist with the Network I&M Coordinator at Mount Rushmore NM, starting in January 2003. This decision was the result of discussions between the Network Coordinator and the USGS-BRD Northern Prairie Science Center Director. A primary duty of the ecologist will be to work with parks in the I&M Network. It is anticipated that some of the work will be in support of I&M activities.

Objective 2 – Compile and evaluate existing data for vertebrates and vascular plants.

FY02 Accomplishments:

- The compilation and documentation of existing data was limited by the high turnover in Network technical staff. However, park-specific meetings were held at Agate Fossil Beds NM, Fort Laramie NHS, Wind Cave NP, and Theodore Roosevelt NP for purposes of identifying existing data and entering such data into national databases. As a result of these meetings significant progress was made in collecting legacy data (e.g., observation cards, voucher specimens, reports) and entering the data into NPSpecies. In FY02, 1,907 records were entered into NPSpecies. The Network installed and tested the program Synthesis as a way to better organize and disseminate inventory and other biological data. However, results of the test were less than satisfactory. Although it was determined that Synthesis has lots of potential and may someday be of use, the program currently has too many bugs, especially on networks, to justify its use. The Network made significant progress on developing an MS Access photographic database and protocol for storing photographic vouchers and other digital images.

FY03 Activities and Products:

- In FY03 the Network will continue meeting with park staff and entering appropriate data into NPSpecies and other databases, and reviewing the quality of the data. The Network will locate additional inventory material including observations, vouchers, and literature. The Network will coordinate data entry with parks, contractors, and WASO. The Network will enter data from the field inventories as it is available.

Objective 3 – Complete the documentation of 90% of vertebrate and vascular plant species expected to occur in the parks.

Task 3.1 – Data mining

FY02 Accomplishments:

- Some additional legacy data was found on presence of species in the parks. For example, several plant vouchers were found at the University of South Dakota herbarium that were collected from Badlands NP (these discoveries were not part of a Network funded project). As a result of the discovery of these vouchers, the Network developed an agreement with an NPS employee to systematically search the herbarium in September of FY02 and October-

December FY03. The Network partnered the funding of this effort with the Heartlands Network, and coordinated on the effort with the Yellowstone Network and the WASO office (preliminary work suggests that many vouchers may come from parks in other networks). The project is not likely to get through the entire herbarium (the herbarium catalogue has not been digitized so it requires a review of each specimen) but should provide an adequate sample to determine whether a larger search is warranted. In the summer of 2002, the museum search of vertebrate vouchers being conducted by the University of Nebraska-Lincoln was initiated. The results of this effort are pending.

FY03 Activities and Products:

- The Network will continue to mine for data and review existing data for quality.
- The museum search of vertebrate vouchers being conducted by the University of Nebraska-Lincoln will conclude in the summer of 2003 (although the final report is not due until FY04).
- The Network will spend approximately \$2,000 to fund a more thorough search of the University of South Dakota herbarium for plant vouchers from NPS units. The work will be conducted by a NPS employee attending graduate school at the university.

Task 3.2 - Prepare and submit a multiyear inventory study plan for vertebrates and vascular plants.

FY02 Accomplishments:

- The Northern Great Plains Inventory Study Plan was approved by the Washington Office in FY02.

FY03 Activities:

- No further tasks are planned in FY03 in regards to the Inventory Study Plan; however, if amendments to the plan are necessary, they will be submitted to WASO for review and approval.

Task 3.3 – Fish inventories

FY02 Accomplishments:

- The fish inventories have been completed and a final report received. Voucher specimens are temporarily stored at parks. Data from the inventories were entered into NPSpecies. Nine species of fish were documented at Devils Tower NM. The investigators expressed surprise that additional species were not detected in light of apparently suitable habitat. The failure to detect some of these species may be due to deeper habitats and inadequate sampling gear. At Mount Rushmore NM two species were collected, one of which was the non-native brook trout. At Fort Laramie NHS 21 species were identified and collected. At least three of the species are non-indigenous (brook and brown trout and common carp). The park contains both warm water and cold water species and, specifically in regards to the Laramie River, appears to be in a transition zone between the two habitat types. The investigators speculated that additional species could have been detected in the North Platte River using electro-fishing from boats. At Scotts Bluff NM 21 fish species

were collected. The investigators felt that additional species may be present in the North Platte River, but high flows limited their sampling of the deep water portions of the river. At Wind Cave NP 7 species were sampled, one of which was the non-native brook trout. The plains topminnow, a species of concern to park staff, was not found in the survey effort. The investigators concluded that the species was most likely not present at the park. In summary, the investigators noted in their report that 20% of the species they found and documented were not on the expected list for the park. Conversely, they did not sample 11 of the 39 species expected to be found at the parks, tenuously suggesting that these species may not be present (with the exception of Scotts Bluff and Devils Tower NM and Fort Laramie NHS where sampling was incomplete due to deep water habitat). The investigators concluded that this deviation from the expected species list for the parks was due in large part to a lack of prior knowledge and sampling effort. The final report was received in FY 2002 and copies distributed to the Washington and Regional offices.

FY03 Activities and Products:

- The Network will process the spatial, photographic, and other unprocessed data from the fish inventories and enter the data and metadata into appropriate databases.

Task 3.4 – Mammal inventories

FY02 Accomplishments:

- Mammal field inventories began in FY02. Small mammal trapping using live-traps and pitfall traps stratified by habitat was conducted at Devils Tower NM, Mount Rushmore NMEM, Fort Union Trading Post NHS, Knife River Indian Villages NHS, Agate Fossil Beds NM, and Scotts Bluff NM. A progress report was received just prior to completion of this annual report; the results of the progress report will be included in next year's Network annual report. Discussions with the investigator indicate that the mammal work was taking somewhat longer than anticipated, due in part to delays in procuring equipment, lack of accessibility, and difficulty in setting pitfall traps due to rocky substrate; however, no significant deviations to the scope of work or study design were necessary. Voucher collections were taken, however, the number and type varied from park to park depending on the park's needs and desires. At least one new county record appears to have been made as a result of the inventory (definitive species identification will require laboratory study). Documentation of mid-size mammals will be made in part using motion sensing cameras. Over 100 camera nights were sampled at Mount Rushmore NMEM in FY02.

FY03 Activities and Products:

- Field work will continue in FY03 at the parks visited in FY02. All parks that had small mammal inventories in FY02 will be revisited for bat inventories using mist nets and acoustic monitors. Those parks will also be inventoried for mid-size and large mammals by searching various habitats and recording all mammals observed (collecting photographic vouchers wherever possible). Complete mammal inventories will be initiated in FY03 at Jewel Cave NM and the Missouri National Recreation River, with the exception that bat

inventories are not needed at Jewel Cave NM. Motion sensing wildlife cameras will be placed in as many parks as possible in FY03.

Task 3.5 – Bird inventories

FY02 Accomplishments:

- Bird inventories, comprised of both systematic point counts and targeted searches, were conducted at Mount Rushmore NMEM, Jewel Cave NM, Knife River Indian Villages NHS, Fort Union NHS, Devils Tower NM, and Wind Cave NP. Point count data from bird inventories in the Black Hills national park units will be pooled with data from a monitoring effort funded by the Black Hills National Forest to evaluate range-wide distribution and temporal trends. A progress report for the inventory effort is due by the end of the 2002 calendar year.

FY03 Activities and Products:

- Field inventories conducted in FY02 will be replicated at the same parks in FY03. Targeted inventories may differ slightly to account for species not documented in earlier efforts (e.g., more nighttime searches may be conducted if necessary to reach the 90% objective); however, the total search hours will remain the same as identified in the scope of work and Study Plan. Point count data from bird inventories in the park units in the Black Hills will be pooled with data from a monitoring effort funded by the Black Hills National Forest to evaluate range-wide distribution and temporal trends.

Task 3.6 – Herpetofauna inventories

FY02 Accomplishments:

- Field inventories for amphibians and reptiles were conducted at Devils Tower NM, Jewel Cave NM, Scotts Bluff NM, Mount Rushmore NMEM, Fort Laramie NHS, Fort Union Trading Post NHS, and Knife River Indian Villages NHS. The investigator has stated that sampling success in FY02 was comparatively poor due to the dry conditions. He also stated that the nighttime searches were less productive than the daytime effort. A progress report is due late in the 2002 calendar year. Although not a direct result of the funded herpetofauna inventory, a plains leopard frog was identified and collected from Badlands NP. This observation significantly expands the known distribution of the species.

FY03 Activities and Products:

- Field inventories for amphibians and reptiles in FY02 will be replicated at the same parks in FY03; however, slight changes will be made in the methods used based on the experience in FY02. Specifically, most of the hours budgeted for nighttime searches will be shifted to additional daytime searches, and some of the hours budgeted for fall field work will be shifted to spring and summer field work. The investigator will work closely with the Network Coordinator to be more flexible and responsive to local weather conditions. If 2003 is another dry year some work may be postponed until 2004. In addition to the sites surveyed in 2002, the herpetofauna inventory will be initiated at the Missouri National Recreation River in FY03. Due to the size and complexity of the park, and the fact that most is in private ownership, significant

preparation will be required for the inventory. It is anticipated that the herpetofauna inventory at the park will be done in conjunction with the mammal inventory.

Task 3.7 – Plant inventories

FY02 Accomplishments:

- No field work for plants was conducted in FY02.

FY03 Activities and Products:

- Field inventories for plants are scheduled to begin in FY03 at Jewel Cave NM, Mount Rushmore NMEM, Fort Laramie NHS, and Fort Union Trading Post NHS. A principle investigator has not yet been identified.

B. Vital Signs Monitoring

Objective 4 – As opportunities arise, prepare for the monitoring phase of the I&M Program.

FY02 Accomplishments:

- The Network conducted a preliminary Vital Signs scoping meeting at Agate Fossil Beds NM in conjunction with a biological inventory meeting. The meeting was viewed as successful in terms of bringing out issues and getting the park to think in terms of long-term monitoring needs.

FY03 Activities and Products:

- Based on information received that the national I&M meeting in Denver in the fall of 2002, the Network does not expect to receive monitoring funding in FY03. In light of the needs and demands of the inventory program, and the limited funding available, the Network does not anticipate working on Vital Signs monitoring in FY03; however, should conditions change, the Network may conduct some monitoring related activities such as establishing a Board of Directors, developing a Charter, or conducting more preliminary scoping meetings.

III. Staffing

FY02

Dan Licht, Northern Great Plains I&M Coordinator (All Year. 0.7 FTE)

Dawn Holguin, Biological Data Technician (January to May)

Jon Dalglish, Biological Data Technician (June to August)

Will Powers, Computer Assistant (August to September)

FY03

Dan Licht, Northern Great Plains I&M Coordinator (0.7 FTE)

Computer Assistant (starting around December 2002)

IV. Public Interest Highlights

A significant range expansion for the Plains leopard frog was made with documentation of the species at Badlands NP. A new county record for a shrew may have been made (pending laboratory identification).

v. Reports, Publications and Presentations

No reports, publications, or formal presentations were given by the Network in FY02. It is anticipated that several presentations will be given in FY03 as the Network develops partnerships with other agencies and organizations, and as the inventory investigators collect more data of interest to the public, other agencies, and the scientific community.

VI. Status of Park Vital Signs Monitoring

The Northern Great Plains Network does not expect to receive Vital Signs monitoring in FY03. The Network will continue park-initiated and/or park funded monitoring projects currently being conducted. A tally of parks conducting monitoring projects is reported in Table 1.

Table 1. Tally of ongoing monitoring projects.

	Air Quality	Water Quality	Water Quantity	Geologic Resources	Plants	Animals	Landscape Characteristics
Planning and Design							
# parks monitoring w/ NRC ¹ funding	3	0	0	0	0	0	0
# parks monitoring w/ other funding	0	1	1	0	5	6	0
Protocols Implemented							
# parks monitoring w/ NRC ¹ funding	3	0	0	0	0	0	0
# parks monitoring w/ other funding	0	1	1	0	5	6	0
Analysis/Synthesis Available							
# parks monitoring w/ NRC ¹ funding	0	0	0	0	0	0	0
# parks monitoring w/ other funding	0	0	0	0	5	6	0

Note 1. Natural Resource Challenge (NRC)

Table 1 includes the work being conducted by the Prairie Cluster Long-term Ecological Monitoring (LTEM) program at Scotts Bluff and Agate Fossil Beds National Monuments. Specifically, the LTEM program is conducting vegetation monitoring at both parks, bird and water quality monitoring at Agate Fossil Beds, and prairie dog monitoring at Scotts Bluff.

Examples of ongoing monitoring projects that are not supported by Natural Resource Challenge funds include a black-footed ferret monitoring program at Badlands National Park, tiger salamander monitoring at Wind Cave National Park, bat monitoring at Jewel Cave National Monument, and exotic plant monitoring at Theodore Roosevelt National

Park. Some of these monitoring projects are conducted solely with park base funds, others are leveraged with other funding sources from within and outside the National Park Service.

VII. Budget

The Northern Great Plains Network received \$197,100 in funding in FY02 and should receive a similar amount in FY03.

A detailed budget for FY03 is described in the Network Inventory Study Plan. The budget is also documented in an MS Access file being submitted to WASO along with this annual report.